

Claims

1. A fuel cell which comprises a cell of the fuel cell having a proton-shift medium interposed between a fuel-side electrode and an oxygen-side electrode and is so constructed that a fuel comprising a compound containing at least hydrogen and nitrogen is supplied directly to the fuel-side electrode.
2. The fuel cell according to Claim 1, wherein the number of carbon of the compound is 3 or less.
3. The fuel cell according to Claim 1, wherein the compound comprises an element including no carbon.
4. The fuel cell according to Claim 1, wherein the proton-shift medium is solid, gel, or sol.
5. The fuel cell according to Claim 1, wherein the fuel comprises a compound including no carbon, and water.
6. The fuel cell according to Claim 1, wherein the fuel-side electrode includes hydrophilic catalyst.
7. The fuel cell according to Claim 6, wherein the hydrophilic catalyst is micronized metal.
8. The fuel cell according to Claim 7, wherein the hydrophilic catalyst is Pt black and/or Pd black and is used in a current density zone of less than 150mA/cm².
9. The fuel cell according to Claim 8, wherein the hydrophilic catalyst is Pt black having a specific surface area of not more than 25m²/g.
10. The fuel cell according to Claim 8, wherein the hydrophilic catalyst is

Pd black having a specific surface area of not more than $70\text{m}^2/\text{g}$.

11. The fuel cell according to Claim 7, wherein the hydrophilic catalyst is at least one micronized metal selected from the group consisting of Rh, Ir, Pt and Ru and is used in a current density zone of not less than $150\text{mA}/\text{cm}^2$.

5 12. The fuel cell according to Claim 11, wherein the hydrophilic catalyst is Rh black having a specific surface area of not less than $9\text{m}^2/\text{g}$.

13. The fuel cell according to Claim 11, wherein the hydrophilic catalyst is Ir black having a specific surface area of not less than $2.9\text{m}^2/\text{g}$.

10 14. The fuel cell according to Claim 11, wherein the hydrophilic catalyst is Pt black having a specific surface area of not less than $33.8\text{m}^2/\text{g}$.

15. The fuel cell according to Claim 11, wherein the hydrophilic catalyst is Pt-Ru black having a specific surface area of not less than $1.4\text{m}^2/\text{g}$.